



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Point and
Non Point Source Management

Nutrient Assessment Protocol

Water Resources Advisory Committee

February 18, 2015

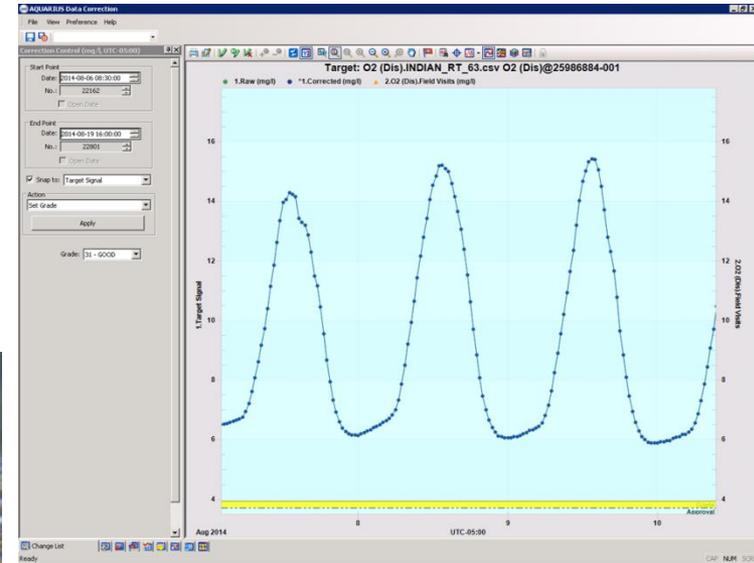
Proposed Methodology for Identifying Nutrients as a Cause of Aquatic Life Use (ALU) Impairment in Wadeable Streams

Background:

- U.S. EPA's most recent National Rivers and Streams Assessment identifies nutrient pollution as one of the most widespread causes of aquatic life use (ALU) impairment
- DEP is in the process of developing an objective, effects-based method for identifying ALU impairments caused by nutrients

3 Key Components of Proposed Nutrient Impact Assessment Methodology

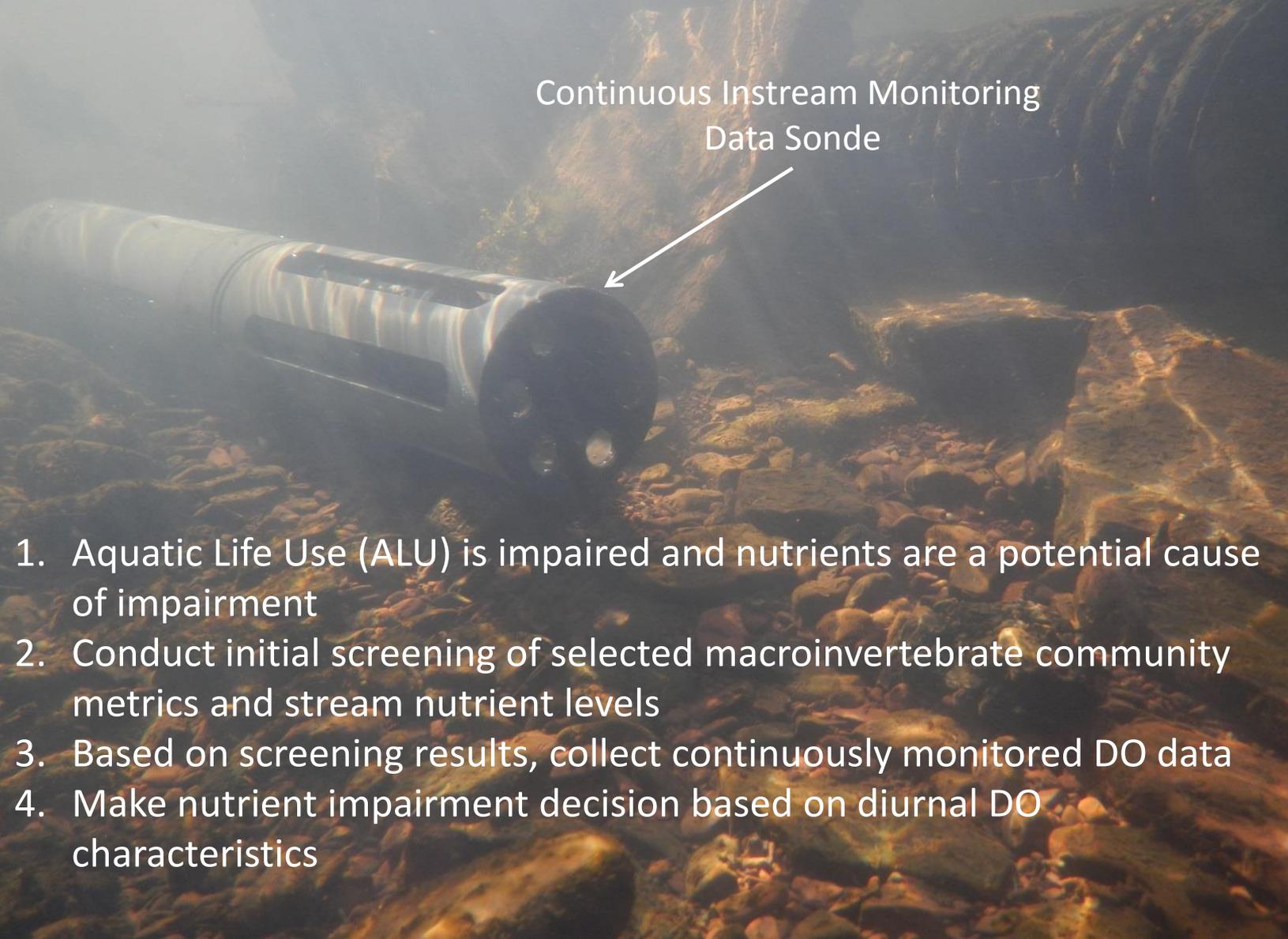
- Macroinvertebrate Community Characteristics
- Phosphorus and Nitrogen Levels
- Diurnal (Daily) Dissolved Oxygen (DO) Fluctuations



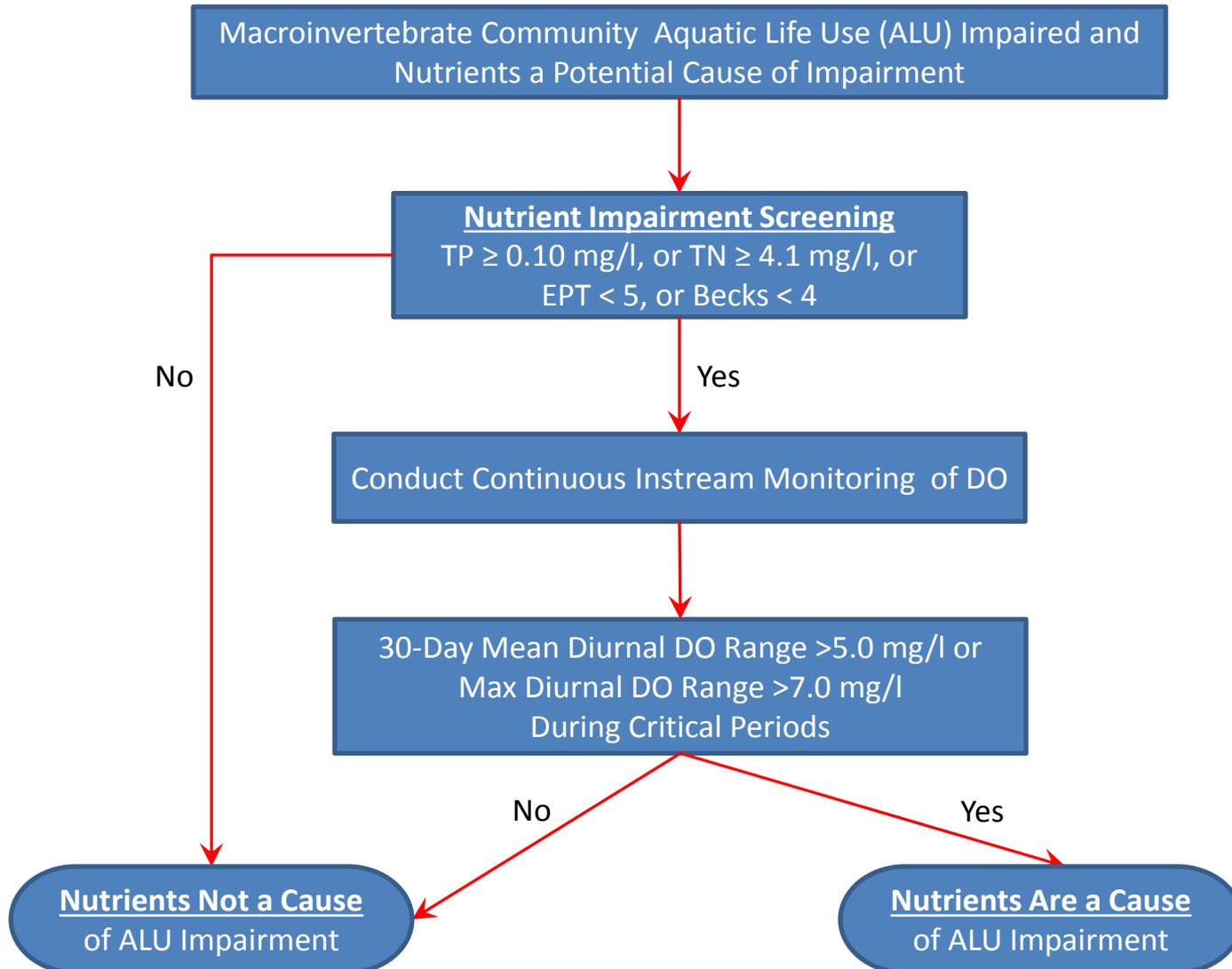
Excessive photosynthetic activity (periphyton DO production) in a southeast Pennsylvania stream

Overview of Proposed Nutrient Impact Assessment Methodology

Continuous Instream Monitoring
Data Sonde

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- An underwater photograph showing a cylindrical, white and black monitoring device (sonde) resting on a rocky stream bed. The device has a black circular sensor at the front. A white arrow points from the text label above to this sensor. The background shows the rocky stream bed and some algae or sediment on the rocks.
1. Aquatic Life Use (ALU) is impaired and nutrients are a potential cause of impairment
 2. Conduct initial screening of selected macroinvertebrate community metrics and stream nutrient levels
 3. Based on screening results, collect continuously monitored DO data
 4. Make nutrient impairment decision based on diurnal DO characteristics

Conceptual Model of Wadeable Stream ALU Nutrient Impact Assessment Methodology



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Questions / Comments

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